Session 1.2

Highlights since the 2015 NOAA Satellite Conference

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Outline

- OSPO: Current Operations
- Conference Objectives
- NSC15 Summary
- Recommendations, Questions & Suggestions from 2015
- Summary / Conclusions

Current Operations

OSPO operates the Nation's **18** environmental satellites:

- 4 Geostationary (GOES-13/14/15/16) by NOAA
- 3 Polar-Orbiting (NOAA-15/18/19) by NOAA
- 6 Defense Meteorological Satellite program (DMSP) operated by NOAA
- 2 OSTM Jason-2 & Jason-3 (Ocean Surface Topography Mission) - Joint NOAA, NASA, CNES, EUMETSAT effort
- 1 Suomi National Polar-orbiting Partnership (NPP) by NOAA & NASA
- 1 DSCOVR (Deep Space Climate Observatory) by NOAA
- 1 COSMIC-1 (Constellation Observing System for Meteorology, Ionosphere and Climate)

*GOES-16 handover to OSPO occurred June 23, 2017.

*JPSS-1 is scheduled to launch on October 12, 2017 from Vandenberg Air Force Base , CA. Becomes NOAA-20 once it reaches orbit.

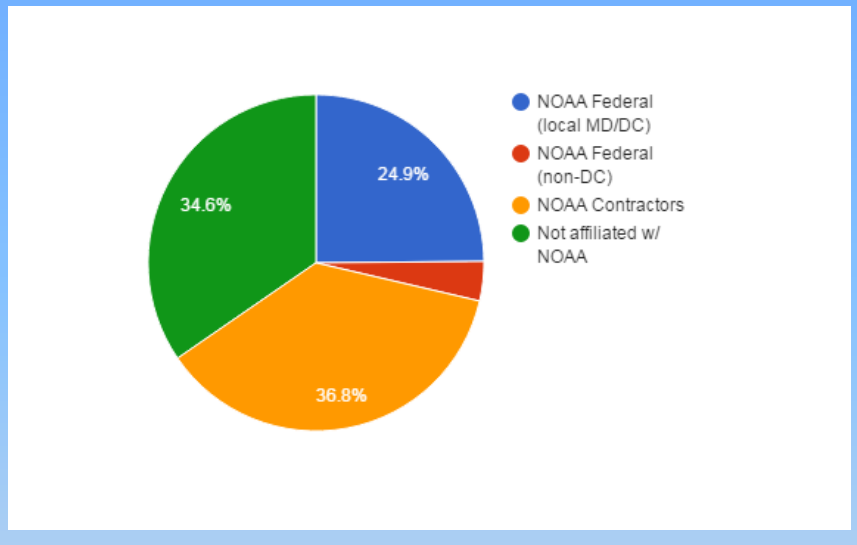
*COSMIC-2A spacecraft and ground segments nearing completion in support of planned April 30, 2018 launch.

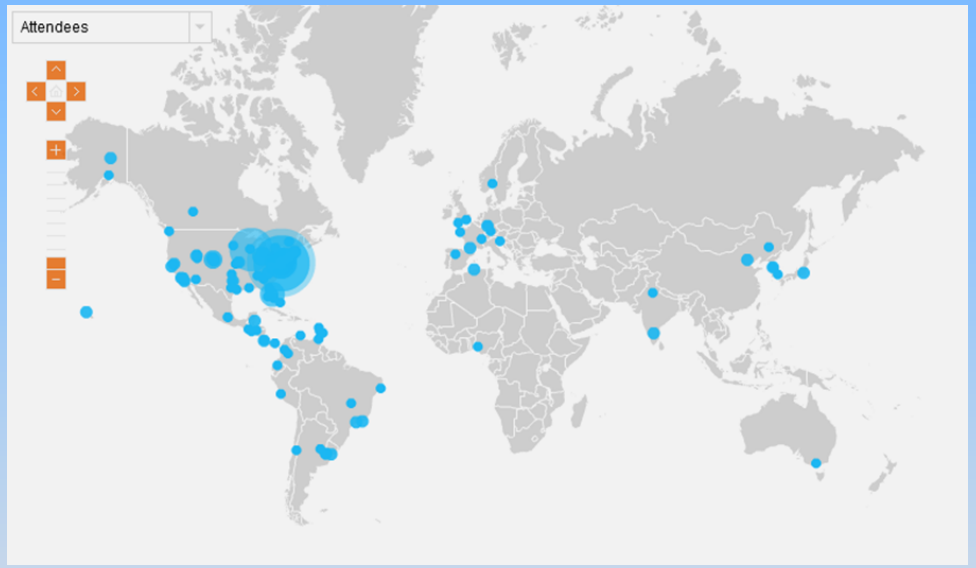
NOAA Satellite Conference

Conference Objectives:

- Continue bi-yearly NOAA Satellite Conferences,
- To reach out and interact with our customers, provide them with updates on our current and future systems and receive feedback from them,
- To improve knowledge and user readiness for products and broadcast services on current and next generation of environmental satellites,
- To discuss and highlight future capabilities.

NSC15 Summary





Participants (actual attendance):

NOAA Federal (MD/DC): 138

NOAA Federal (non-DC): 21

NOAA Contractors: 204*

Not affiliated w/NOAA: 192*, including 73 foreign nationals from 36 countries…

Total: **617** attendees (that includes 62 walk-ins)

*not including walk-ins

Recommendations, Questions & Suggestions from 2015

Total of **12**, on a wide variety of topics:

- GOES-R Plans
- GEONETCast
- Training
- Frequency Matters

Full Report

http://satelliteconferences.noaa.gov/2015/doc/NSC2015_Final_Report.pdf

Recommendations, Questions & Suggestions from 2015

#1 – Report final position of GOES-R

Response: GOES-16 will be placed into operations as the GOES-East satellite, replacing GOES-13 in November, 2017

https://www.nesdis.noaa.gov/GOES-16

NOAA will continue to fully verify and validate the instruments and products from GOES-16 while it remains in the checkout location at 89.5W over the Summer.

GRB users will want to check out their systems with data from the PLPT (Post Launch Product Test), when GOES-R is at 89.9W. This should also be a consideration for GRB receiver acquisition and deployment. Being prepared for PLPT requires a pointable receiving system is ready even sooner than the dates in the fly-out chart. Finally, please see the downlink document for additional information: http://www.goes-r.gov/users/docs/GRB_downlink.pdf

NSC15 Agenda: Session 2.1

NSC17 Plenary Session: GOES-R and Instruments (Tue, July 18 @9:00AM)

Recommendations, Questions & Suggestions from 2015

#2 – Post table of data product sizes for L0, L1b, and L2 data on the GOES-R website

Completed (Fall 2016)

Recommendations, Questions & Suggestions from 2015

#3 – Generate a Spanish language version of the PDA user's manual

Resource constraints prohibited completion by NOAA/NESDIS.

Recommendations, Questions & Suggestions from 2015

#4 – Is it feasible to stage additional data at the CBU?

NESDIS has undertaken a preliminary analysis to determine the level of effort and cost to provide additional products (GOES-R and the other supported missions) from the CBU facility. This effort is ongoing.

Recommendations, Questions & Suggestions from 2015

#5 – Can NOAA allow access to the PDA test bed for user feedback?

The current PDA I&T (test environment) is intended to support critical integration and test activities, then formal verification and validation. It is fully utilized for planned activities and won't be configured as a test bed for user feedback, to ensure requirements for support of GOES-R and JPSS products are met.

Recommendations, Questions & Suggestions from 2015

#6 – NOAA in collaboration with WMO dedicate special attention for training in the region both in English and Spanish, in the following three areas:

a) Virtual training to improve access to existing training materials.
b) Training for trainers, specifically on the characteristics and use of GOES-R and JPSS data and imagery.
c) Face to face training in 2016 will also be needed after the launch of GOES-R.

Initial Response: Initial response: NESDIS will discuss with UCAR/COMET, WMO Space Program and VLAB partners.

Fall 2016 Update: PRO Team in GOES-R has taken the lead to coordinate efforts for all GOES-R training to internationals and at major conferences like AMS and NWA, in other words all training besides training for NWS. PRO has already begun this effort in earnest by leading coordination of training in Curaçao (WMO Regional Associations III and IV Coordination Group on Satellite Data Requirements) and Korea.

NSC15 Agenda: Session 4.2

NSC17 Panel Discussion: Training Resources (Tue, July 18 @12:45PM)

Recommendations, Questions & Suggestions from 2015

#7 – GEONETCast (GNC) was identified as a satellite distribution system that could reduce service interruption in the transition from current GOES to GOES-R.

Initial response: NESDIS/OSPO will review possible options as part of normal planning and budget processes.

Early 2017 Update: The GEONETCast Americas (GNC-A) broadcast bandwidth was increased during 2016 to have the capacity to carry a selection of GOES-R CMI imagery, other level 2 GOES-R products, Geostationary Lightning Mapper data and level 3 products derived from GOES series instruments. The selection of products was coordinated through the World Meteorological Organization Regional Associations III and IV Coordination Group on Satellite Data Requirements and Group on Earth Observations AmeriGEOSS project. The GOES-R products were added to the GNC-A broadcast in the Winter and Spring of 2017 following the GOES-R schedule.

Recommendations, Questions & Suggestions from 2015

#8 – Many of the RA III / RA IV countries would use GNC-A if the data requirements were more closely aligned with operational usage.

Initial response: While the service is not operationally monitored on a 24/7 basis, but on a working day basis, performance is close to 100% due to the high reliability of the system. NOAA will continue to engage with members of RA III/ RA IV in the WMO Coordination Group on Satellite Data Requirements on such matters. NESDIS/OSPO will reviewing possible options as part of normal planning and budget processes.

Spring 2017 Update: NOAA and INPE/Brazil have coordinated the matching of the World Meteorological Organization Regional Associations III and IV Coordination Group on Satellite Data Requirements generated by a group of countries with representation from the regional Hydro-Meteorological agencies and community. Through this process, a selection of GOES-R data and products was recommended for broadcast over GNC-A at a Coordination Group meeting in Curaçao in 2016. These data were added as they became available for release to the public in the Winter and Spring of 2017. The documentation of the matching of the GOES-16 product suite and the WMO requirements was briefed to the Coordination Group at a side event during the 2017 NOAA Satellite Conference.

Recommendations, Questions & Suggestions from 2015

#9 – Consider establishing a satellite spectrum working group for Western Hemisphere space agencies.

After consideration of establishing a satellite spectrum working group for Western Hemisphere space agencies, recommend not establishing a new working group. It appears to be redundant with existing organizations of a similar orientation, such as the Space Frequency Coordination Group (SFCG), the Coordination Group for Meteorological Satellites (CGMS) and other organizations. A new "generic" satellite spectrum working group is not expected to be uniquely useful. Additionally, countries in the Western Hemisphere are encouraged to be involved in the Inter-American Telecommunication Commission (CITEL) which is the regional spectrum management body for the Western Hemisphere. It may be desirable to create a spectrum management group/action committee for protecting/advancing the spectrum necessary for the provision of hydrological and meteorological services in this body that would liaison with such organizations as CGMS, CITEL, IOAG and SFCG.

NSC15 Agenda: Session 4.4

NSC17 Town Hall Meeting: Spectrum allocation and NOAA Satellite Downlinks (Thur, July 20 @11:00AM)

Recommendations, Questions & Suggestions from 2015

#10 – NESDIS to develop an interference reporting protocol for polar & geostationary users.

NESDIS is undertaking to develop an interference reporting protocol as part of its implementation of a more comprehensive spectrum management office with established spectrum regulatory policies and procedures.

NSC15 Agenda: Session 4.4

NSC17 Town Hall Meeting: Spectrum allocation and NOAA Satellite Downlinks (Thur, July 20 @11:00AM)

Recommendations, Questions & Suggestions from 2015

#11 – Can NOAA employ known & tested frequency management (interference detection and prevention) techniques and equipment already used by industry?

NOAA is funded through AWS-3 auction revenue to design and deploy a Radio Frequency Interference Monitoring System (RFIMS) at specific critical NOAA sites. While this funding is specific for 1695-1710 MHz band as part of AWS-3, it is planned to be of a sufficient open architecture to allow for additional band monitoring. This approach, as it becomes established operationally, is considered to be most optimum for deploying to additional sites and frequencies. NOAA is continuing to examine ways to improve on monitoring and protection of it's mission critical spectrum authorizations as well as the "passive bands" that are essential for remote sensing.

NSC15 Agenda: Session 5.2

NSC17 Town Hall Meeting: Spectrum allocation and NOAA Satellite Downlinks (Thur, July 20 @11:00AM)

Recommendations, Questions & Suggestions from 2015

#12 – Further investigation into the HRIT/EMWIN interference issues from commercial cell phones (following spectrum auction); actions to stop the auction of GOES-R frequency band in the future; and engaging the US Government to investigate and review of these interference issues.

HRIT/EMWIN Interference is expected to be problematic and possible mitigation approaches in the near future could be accomplished by simply switching between GOES-R series and GOES-N series EMWIN receivers as they operate at different frequencies. (Legacy EMWIN is not as close to the new AWS-3 handsets as GOES-16 EMWIN is to the band edge.) Existing EMWIN receiver systems are not currently designed to resist adjacent band interference. AWS-3 implementation is ongoing. The auction winners have not implemented their systems to date, though they are expected to commence operating in the near future. DOC/NOAA continues to meet with the auction winners and discuss protection of incumbent operations in the band. Due to the portable nature of EMWIN receiver uses, coordination zones are not an effective mitigation from interference.

NSC15 Post-conference survey

Recommendations, Questions & Suggestions from 2015

Additional comments from the post-conference survey:

- Find better and larger venue!
- Partner with third party co-sponsors, non-profit foundations or cooperative institutes as hosts to manage the conference, and charge nominal Registration Fee (provision of adequate breaks).
- Provide news about the products and launching of GOES-R.
- Have more space for exhibits and posters.
- Provide hands-on training workshops.
- Include Education/STEM or Student engagement sessions!
- Have more user presentations.
- Host another conference in 2017!

Here we are!

Summary / Conclusions

We want to hear from you…

- Join us at the Ice Breaker tonight!
- Actively participate in Q&A and Breakout Sessions.
- Attend Poster and Exhibit Sessions.
- Follow us on Twitter: @noaasatellites and @NSC_2017 #NSC2017
- Participate in Post-Conference Evaluation Survey.

Let's have a great week!